Report from the Roundtable on Marine Protected Area System Planning

D.G. Fenton and M.C. Westhead

Department of Fisheries and Oceans
Oceans Branch
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

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REPORT FROM THE ROUNDTABLE ON MARINE PROTECTED AREA SYSTEM PLANNING

By

Derek G. Fenton and Maxine C. Westhead

Maritimes Region
Department of Fisheries and Oceans
Oceans Branch
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2
Canada

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TABLE OF CONTENTS

ABSTRACT.....v

INTRODUCTION TO THE *ROUNDTABLE* AND BACKGROUND
(D. Fenton).....1

SUMMARY OF PAPERS (D. Fenton and M. Westhead).....4

Session 1 - Introduction and Marine Protected Area Programs.....4

Introduction to Marine Protected Areas (M. Willison).....4

Marine Protected Areas and the *Oceans Act* (B. Rutherford).....5

Parks Canada's National Marine Conservation Areas (N. Munro).....6

Protected Area Programs of Environment Canada (L. Hildebrand).....8

Nova Scotia Parks Strategy (J. LeDuc).....9

National Marine Sanctuaries Program (B. Barr).....10

Marine Protected Areas System Planning - The Australian
Experience (J. Day).....11

Session 2 - Marine Protected Area Tools and Approaches.....14

Marine Ecosystem Delineation in the Strait of Georgia, British Columbia -
An Overview of Approaches Presented at a Recent Workshop
(J Barr and C. Levings).....14

Information Needs for Marine Protected Areas - The Role of the East
Coast of North America Strategic Assessment Project (ECNASAP)
(K. Zwannenburg).....15

Habitat Suitability Indices and Essential Fish Habitat
(S. Brown).....15

Role of Traditional Ecological Knowledge in Coastal and Marine
Management - The Experience in the Maritimes
(D. McCullough and C. Dennis).....16

Assessing and Monitoring in Marine Protected Areas - A Case Study of
Stellwagen Bank (P. Auster).....17

Biophysical Classification of Offshore Regions - Nova Scotia
(D. Davis) 17

A National Framework for Marine Representative Areas - Hierarchical Classification Systems and an Approach to Selection of Marine Protected Areas
(J. Roff).....18

ROUNDTABLE DISCUSSION – SUMMARY (D. Fenton) 20

ACKNOWLEDGEMENTS.....24

References and Additional Reading.....25

APPENDICIES:

Appendix A: *Oceans Act*: Part II Oceans Management Strategy.....26

Appendix B: *Roundtable* Participants.....30

Appendix C: *Roundtable* Agenda.....32

ABSTRACT

The *Oceans Act* directs the Department of Fisheries and Oceans to lead and facilitate the development of a national system of Marine Protected Areas. The Department, along with other federal agencies, is currently identifying the requirements and components of this national system. One of the most important aspects of this identification process is bringing together those with a shared interest in MPAs, and developing the conceptual frameworks and information base in a collaborative manner. A discussion paper was released in early 1997 to seek input and comment from a variety of interests on DFO's approach to developing a MPA Program. As a follow up to this paper, and to further discussion on Marine Protected Areas, a workshop was held in February of 1998 in Halifax, Nova Scotia. The aim of the workshop was to provide a forum for an open discussion on the approaches and information needs for Marine Protected Area system planning in Canada.

The workshop, or *Roundtable*, involved over 60 participants from around the Maritimes, Canada and other countries. The first session of the *Roundtable*, "Introduction and Marine Protected Area Programs", gave participants an overview of past experiences and lessons learned with MPA system planning in Canada, Australia and the United States. The second session, "Marine Protected Area Tools and Approaches", provided an overview of research efforts and tools available for describing and assessing marine ecosystems. Finally, there was a *Roundtable* discussion where all participants were invited to share their views, express opinions, and identify issues concerned with MPA system planning for Canada. Participants identified constraints, challenges, and opportunities for the future.

RESUMÉ

En vertu de la *Loi sur les océans*, Pêches et Océans Canada (MPO) doit diriger et coordonner l'élaboration et la mise en oeuvre d'un système national de zones de protection marine (ZPM). Le MPO, de concert avec d'autres organismes fédéraux, établit actuellement les exigences et les composantes de ce système national. Un des aspects les plus importants du processus d'établissement du système consiste à rassembler tous les intervenants que les ZPM intéressent et à élaborer avec eux des cadres conceptuels de même qu'une base d'information. Un document de travail a été publié au début de 1997 afin de solliciter l'apport et les commentaires de divers groupes d'intérêts concernant la démarche entreprise par le MPO pour établir un programme de ZPM. À la suite de la parution de ce document, et afin d'amorcer la discussion sur les zones de protection marine, un atelier s'est tenu en février 1998, à Halifax, en Nouvelle-Écosse. L'atelier se voulait une tribune pour discuter ouvertement des démarches et des besoins en information en vue de la planification du système de zones de protection marine au Canada.

L'atelier, ou la table ronde comme on l'a désignée, regroupait plus de soixante participants de l'ensemble des Maritimes, du reste du Canada et d'autres pays. Dans le cadre de la première séance de la table ronde qui s'intitulait « Introduction et programmes de zones de protection marine », un aperçu des expériences antérieures et des leçons tirées quant à la planification d'un système de ZPM au Canada, en Australie et aux États-Unis a été donné aux participants. Lors de la deuxième séance qui portait le titre « Outils et approches pour les zones de protection marine », les participants ont eu un survol des efforts déployés et des outils de recherche utilisés pour décrire et évaluer les écosystèmes marins. Enfin, tous les participants aux séances ont été invités à une discussion de la table ronde pour faire part de leurs points de vue, exprimer leurs opinions et cerner les problèmes éventuels touchant la planification d'un système de ZPM au Canada. La discussion a permis de déterminer les contraintes, les défis et les occasions que présente l'établissement du système.

INTRODUCTION TO THE ROUNDTABLE AND BACKGROUND

(D. Fenton)

Marine protected areas in Canada: The role of the *Oceans Act*

The 1997 *Oceans Act* affirms the role of the Department of Fisheries and Oceans (DFO) as the lead federal department regarding oceans management in Canada. Under this mandate, DFO will coordinate with its partners the development of an oceans and coastal management (OCM) framework. This framework will provide a set of commonly agreed to objectives, management mechanisms, and standards and measures. The guiding principles of the OCM framework are articulated in the *Oceans Act* as: sustainable development, integrated management, the ecosystem approach, the precautionary approach and the collaborative approach to the management of activities in the marine environment. Appendix A provides the text for key sections from Part II of the *Oceans Act*.

The development of a OCM framework includes three complementary initiatives to achieve its objectives: integrated management plans in estuarine, coastal, and marine waters; the establishment of marine environmental quality standards, criteria and guidelines; and the designation of marine protected areas (MPAs).

The continued growth of Canada's oceans sector has and will continue to put pressure on the ocean environment and ecosystems. The challenges include marine conservation and environmental protection, land-based sources of pollution, marine and public safety, compliance and enforcement, and increasing levels of multiple and conflicting oceans and coastal use. Efforts are underway to address many of these concerns, but an integrated approach is key to moving toward coordinated management. While the overall management of activities in or affecting the ocean will be achieved through integrated management plans, there are highly productive areas, areas of high indigenous biodiversity, sensitive habitats, areas of particular importance to coastal communities, and key or limiting habitats for particular species which will need to be proactively identified and protected. These "special areas" may become marine protected areas or MPAs under the *Oceans Act*.

Marine protected areas (MPAs)[1] are increasingly being used around the world as a tool for protecting and conserving important species, habitats, and ecosystem processes. Over 1300 protected areas have been established worldwide (Kelleher and Kenchington,1992). To date, the establishment of protected areas in the marine environment in Canada has been limited, but there is increasing interest, commitment, and research on the topic.

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[1] The term "marine protected area" is widely used in the literature and internationally to describe discrete areas of the marine environment that have been assigned some form of protection. For example, the International Union for the Conservation of Nature (IUCN) describes a marine protected area as: Any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment. This should not be confused with the definition and purposes for designation of a marine protected area as defined under the *Oceans Act*.

Since the passage of the *Oceans Act*, DFO has been developing the Marine Protected Areas (MPA) Program to support the objectives of the Act in conserving and protecting important marine environments and resources. With the passage of the *Oceans Act*, DFO will join two other federal departments, Parks Canada and Environment Canada, in having direct responsibility for the identification, designation, and management of protected areas in the marine environment. Section 35 of the *Oceans Act* directs DFO to lead and facilitate the development of a national system of marine protected areas. The Department, with the other federal agencies, is in the early stages of identifying the requirements and components of this "national system", bringing together those with a shared interest in MPAs and developing the conceptual frameworks and information base in a collaborative manner. A discussion paper was released in early 1997 to seek input and comment from a variety of interests and users on DFO's approach to developing a MPA Program (DFO, 1997).

Roundtable on Marine Protected Areas System Planning (Objectives and Design)

The *Roundtable* on Marine Protected Area System Planning was held on February 12-13 at Maritime Centre in Halifax, Nova Scotia and was hosted by the *Oceans Act* Coordination Office of DFO. Over 60 participants attended the *Roundtable* representing a variety of interests and expertise, including fisheries organizations, environmental organizations, researchers, academia, and relevant government agencies. The majority of the attendees were from the Maritime provinces, however the MPA Coordinators from each of the DFO Regions across Canada attended, as well as several international guests. Appendix B provides a full listing of the participants and invitees to the *Roundtable*.

The objective of the *Roundtable* was to, "provide a forum for an open discussion on the approaches and information needs for MPA system planning in Canada". The *Roundtable* was exploratory in nature, attempting to build upon the current level of knowledge regarding marine conservation approaches and the role of protected areas. As DFO is a new player with respect to MPA system planning, the *Roundtable* provided an opportunity for the Department to review various MPA planning approaches and tools, both internationally and within Canada. The *Roundtable* allowed a variety of interests to share information and engage in an open dialogue on the approaches and the information needs for future MPA system planning in Canada.

It should be stressed that the *Roundtable* was not consultations on the MPA Program. The *Roundtable* represented one step towards sharing information and building a collaborative approach to MPA system planning in Canada. Similarly, the *Roundtable* was not able to provide an opportunity to discuss the full range of issues surrounding the development of MPAs, *e.g.* site management issues, community involvement and education, enforcement, etc.

Since the 1998 *Roundtable* DFO has released a number of documents on the development of the MPA Program, including:

- in April 1998 DFO Headquarters released the Marine Protected Areas Program document, containing both the Marine Protected Areas Program Policy and the National

Framework for Establishing and Managing Marine Protected Areas (DFO 1998a and DFO, 1999):

- in June 1998 the paper Working Together for Marine Protected Areas: A National Approach was released describing the responsibilities and efforts of the three federal departments mandated with establishing and managing the range of protected areas in Canada (Government of Canada, 1998); and

- in May 1998 DFO Maritimes Region released a document to the public that combines the National Marine Protected Areas Program with the Maritimes Region – Marine Protected Areas Program Framework (DFO, 1998b). The intent is to provide the public with a single document which describes the national framework and the proposed process for implementation of this framework within the Maritimes Region.

A public review of national and regional documents on the overall MPA Program was initiated in the spring of 1998, and will continue over the next few years.

The MPA Program in the Maritimes and across Canada advocates using a "learn-by-doing" approach. Beginning in late 1998 DFO began to identify the first "Areas of Interest" (AOIs) under the MPA Program, with the following announced to date:

- Sable Gully (Maritimes Region)
- Basin Head (Maritimes Region)
- Musquash Estuary (Maritimes Region)
- Gabriola Passage (Pacific Region)
- Endeavour Sea Vents (Pacific Region)
- Race Rocks (Pacific Region)
- Bowie Sea Mounts (Pacific Region)

These projects are being selected from sites where a level of interest has already been demonstrated, including community support, research interest, and environmental concerns. They also represent areas which are thought to provide good learning experiences which will allow DFO to better implement the MPA Program. The knowledge gained from these first sites will allow DFO to refine National and Regional Frameworks to reflect these "real world" experiences.

In addition to these specific sites, a wide range of discussions and research projects have been initiated to help identify potential sites and to address different issues regarding MPAs across Canada.

Roundtable Agenda

The *Roundtable* was divided into two sections: (i) Presentations and (ii) *Roundtable* Discussion. Appendix C provides the full *Roundtable* agenda and list of presenters.

(i) Presentations: On February 12th and part of the 13th several short (approximately 30 minute) presentations were made on a broad range of topics related to MPA system planning. This portion of the agenda was facilitated by Faith Scattolon of the *Oceans Act* Coordination Office.

The presentations were divided into two sessions:

- *Introduction and Marine Protected Area Programs*: Presenters provided an overview of the experience with MPA system planning in Canada, Australia, and the United States describing the objectives and lessons learned in protected area programs

- *Marine Protected Area Tools and Approaches*: Presenters provided an overview of research efforts and tools available for describing and assessing marine ecosystems, with particular application to conservation initiatives such as MPAs.

(ii) *Roundtable* Discussion: Following the presentations on February 13, participants were asked to take part in an open discussion on the key points from the earlier presentations and to assist with identifying and addressing issues and approaches to MPA system planning for Canada. The session was facilitated by Bob Rutherford of the *Oceans Act* Coordination Office

SUMMARY OF PRESENTATIONS

(D.Fenton and M. Westhead)

The following provides short abstracts from the presentations, describing the highlights or main points of each. For many of the presentations, additional information is available upon request from the *Oceans Act* Coordination Office, including overheads, speaking notes, and related journal articles.

Session 1 - Introduction and Marine Protected Area Programs

Introduction to Marine Protected Areas
Martin Willison, Dalhousie University

Dr. Martin Willison began by pointing out that recent interest in MPAs is a global phenomenon, with many nations adopting MPAs as a conservation strategy, with over 1,300 MPAs identified world-wide. The driving force behind this the "extinction spasm" which has moved from the terrestrial to the marine realm, as well as the understanding that habitat protection is paramount if we are to preserve biodiversity and ecosystems.

Martin then provided the common definition of a marine protected area: "any area of intertidal or subtidal terrain together with its overlying water and association flora, fauna, historical and cultural features which has been reserved by law or other effective means to protect part or all of the enclosed environment" (from IUCN). In recent years the oceans

have been losing more and more of their 'natural' protected areas due to technological advances and loss of cultural beliefs and practices.

The presentation posed the question: "How do we establish MPAs?". Martin stated that it is generally acknowledged that there are 5 major groups of criteria to be used - ecological, economic, social, regional, and pragmatic values. System planning was defined as a planning process for protected areas that is rational and scientific, used to select and design a set of protected areas based on an analysis of natural regions and ecosystem diversity within a defined geographic region in order to maintain certain defined conservation objectives. The general conservation objective is usually minimal loss of biodiversity, but may also involve specific targets (*e.g.*, population sizes of specific organisms).

Martin provided a historical example using the National Parks System of Parks Canada, which first started as an ad hoc selection process as part of a profit making endeavor, *e.g.* Banff National Park. It then evolved into a process of selecting sites for aesthetic reasons. Later it was recognized that some science was needed in the selection, so the 'gap filling' process began, and is currently ongoing. We now have a more rational basis for deciding where to put the national parks, geared towards filling up a representative set of parks which characterize the diversity of the natural regions found in Canada.

With the new *Oceans Act*, Martin pointed out that we now have legislation to put MPAs into place for a variety of reasons. We can do it and we clearly need to do it. The problem is figuring out how to come to an agreement which will maximize everybody's interests while minimizing damage to the biosphere.

Marine Protected Areas and the Oceans Act
Bob Rutherford, Oceans Act Coordination Office
Department of Fisheries and Oceans

Bob Rutherford began with a synopsis of Part I of the *Oceans Act*, which affirms Canada's jurisdiction and responsibilities in the exclusive economic zone. Part II of the Act (Appendix A) promotes and calls for the development and implementation of a strategy for the integrated management of estuarine, coastal and marine ecosystems, based on three guiding principles:

- sustainable development;
- integrated management, and;
- the precautionary approach.

There are several legislative 'tools' defined within the *Oceans Act* for DFO to assist with the implementation of integrated management plans. Marine environmental quality (MEQ) standards, guidelines and criteria can be established to protect marine ecosystems. They will set the standards to work towards, be the standard for monitoring, and the health of the ocean, which can also be turned into enforceable regulations. Another tool is MPAs which are defined in the Act (Section 35.1) as "an area of the sea that forms part of the internal

waters of Canada, the territorial sea of Canada or the exclusive economic zone of Canada and has been designated under this section for special protection for one or more of the following reasons:

- conservation and protection of commercial and non-commercial fisheries resources, including marine mammals;
- conservation and protection of threatened or endangered marine species;
- conservation and protection of unique habitats;
- conservation and protection of areas of high biodiversity or high biological productivity; and
- conservation and protection of any other marine resources or habitats necessary to fill the mandate of the Minister"

In Section 35(2) of the Act, it reads: "For the purposes of integrated management planning, the Minister will lead and co-ordinate the development and implementation of a national system of marine protected areas on behalf of the Government of Canada." There are currently three federal programs, all of which have to be co-ordinated into one approach to protected areas in Canada. Bob presented the main steps in designating an individual MPA, which are described in the DFO discussion documents.

Bob concluded by identifying the next steps, which are:

- to identify the areas which meet the reasons for MPA establishment in the Act
- to co-ordinate the existing federal programs, and work collaboratively with the provincial protected areas programs
- to take an integrated planning approach to developing this systems plan with all the interested parties
- to build on what is already in place

Parks Canada's National Marine Conservation Areas
Neil Munro, Parks Canada (Atlantic Region)

Neil started his presentation with a broad overview of Parks Canada's mandate in the marine environment and the development of a National Marine Conservation Area (NMCA) system. In general, a NMCA it is an area that includes the seabed, its subsoil and the overlying water column, managed for sustainable use overall, and often containing smaller zones of higher protection. He noted that offshore mining, hydrocarbon development and ocean dumping are not permitted within NMCAs, whereas most traditional fishing activities that are managed on a sustainable basis would continue. Neil also stressed that NMCAs cannot be managed in isolation from the surrounding region, as human activities (both on land and in water) can have detrimental effects over wide areas.

Neil then stated the objectives of a NMCA:

- represent the diversity of marine ecosystems;

- preserve biodiversity;
- serve as models of sustainable use;
- facilitate and encourage ecological research and monitoring;
- provide interpretation of marine areas for conservation, education and tourism;
- protect endangered species and their habitats;
- protect areas critical to economically important native species; and
- protect cultural resources

Neil went on to explain the basis of Parks Canada's NMCA system. Parks Canada is committed to establishing a network of NMCAs which will protect and conserve marine areas which represent the full range of Canada's oceanic and Great Lakes environments. The various Canadian environments will be subdivided into 29 marine regions of representativeness, with the long-term goal having each region represented with a NMCA.

The NMCA establishment process is summarized as follows:

1. Identifying Representative Marine Areas: Studies are carried out to identify the representative marine regions, taking factors such as habitat, oceanography, biology and cultural features into account.

2. Selecting a Potential NMCA: Further studies and consultations are undertaken to select amongst proposed marine areas. A wide range of factors are considered during this process, some of which are listed below:
   - quality of regional representation;
   - presence of an exceptional natural phenomena and/or cultural resources;
   - potential value for ecological research and monitoring;
   - implications of land claims and treaties with Aboriginal Peoples; and
   - federal/provincial/territorial government priorities

3. Assessing NMCA Feasibility: Once a site is selected, a NMCA proposal is prepared as the basis for a detailed feasibility assessment which includes public consultations. This stage requires direct involvement of the provincial or territorial government, and consultation with representatives of local communities.

4. Negotiating a New NMCA Agreement: New NMCA agreements cover many different topics depending on the circumstances, including:
   - final boundaries;
   - co-operation in NMCA planning and management; and
   - regional integration

5. Establishing a New NMCA in Legislation: NMCAs are currently established under the *National Parks Act*, but a *National Marine Conservation Areas Act* is being prepared.

New legislation is needed because amendments to the *National Parks Act* were interim, the NPA is poorly suited to administer 'multiple use' areas and as well as being limited in application beyond the territorial sea.

Neil summarized Parks Canada's niche within marine conservation. Firstly, Parks Canada has played a leadership role in being actively involved in the discussion, establishment and management of MPAs since 1986. They also have a strong focus on the role of education and interpretation, and encourage interdisciplinary research and monitoring.

In conclusion, Neil summarized the lessons that Parks Canada has learned:

- need for community based and supported program;
- need to involve local fishers as they are key users and have the most in depth knowledge of the area;
- need to have good data for reference (biological, physical, economic, etc.);
- an effective interactive public consultation process is critical;
- it is essential to have both a process and individuals involved that build trust;
- flexibility to discuss options within a clear policy framework to work;
- need to have open communication and dialogue between all parties; and
- timely response to public queries and an overall sense of the establishment process is essential

Protected Area Programs of Environment Canada
Larry Hildebrand, Environment Canada (Atlantic Region)

Larry Hildebrand began is presentation by introducing the Canadian Wildlife Service (CWS), which has specific resource management responsibilities under international conventions and national laws. These include the conservation and protection of the Canadian and global environments through programs aimed at wildlife, particularly migratory birds (including pelagic seabirds) and the habitats upon which they depend. It achieves this by establishing protected areas for nationally and internationally significant wildlife habitats, and cooperating with others in the maintenance of wildlife habitats across Canadian landscapes and seascapes.

The CWS's legislative framework include:

- the *Migratory Birds Convention Act* which allows for the establishment of Migratory Bird Sanctuaries (MBSs) - currently 14 in Atlantic Canada, 13 of which are coastal/marine; and
- the *Canada Wildlife Act* which allows for the establishment of National Wildlife Areas (NWAs) - currently 10 in Atlantic Canada, 7 are coastal/marine

Larry went on to discuss the 1994 amendments to the *Canada Wildlife Act*. The amendment created provisions for establishing Marine Wildlife Areas out to 200 nm. This enhances EC's ability to address both coastal and offshore marine conservation issues, while permitting the establishment of regulations for research, conservation and interpretation. As there is no new funding for this expanded mandate, partnerships will be essential for this to

be effective. The protected marine area program was created primarily for the conservation of populations of marine migratory birds and the ecosystems upon which they depend.

The establishment of Marine Wildlife Areas involves the following steps:

- Selection Criteria (to be developed): emphasis upon unique and critical areas for migratory birds (feeding and/or upwelling areas, polynyas, molting areas, overwintering sites, etc.)
- Site Boundaries (to be specifically determined): comprised of air, water surface, water column and seabed
- Enforcement (no regulations): public education, communication and cooperation vs. physical inspection

CWS has placed a strong focus on seabirds for two main reasons. First, seabirds are integral components of marine ecosystems, and second Canada's marine waters support internationally significant populations. They are also subject to hunting, mortality from oil and other pollution, bycatch in fishing gear, and other destructive activities. Many sites important to seabirds have no conservation designation.

Larry wrapped up with a positive summary of EC's role in developing a system of protected areas. The CWA amendment enables EC to enter into partnership agreements for the establishment and cooperative management of marine wildlife areas. Also, EC intends to work closely with DFO, Heritage-Parks and any others in the development of a fully cooperative MPA program in Canada.

Nova Scotia Parks Strategy
John LeDuc, Parks Division, Nova Scotia Government

John LeDuc began with an introduction to the Protected Areas Strategy of Nova Scotia, a completely terrestrial based program. There are three components to the strategy: nature reserves, wilderness areas and provincial parks. The objectives of the strategy are protection of representative samples of natural landscapes, unique features, and natural areas for wilderness recreation and nature tourism. The lands dedicated to protection within Nova Scotia is aimed at 8.4% (presently 2.9%).

John described the consultation process of the Protected Areas Strategy. The first step was the inventory and planning stage (3 years) which involved the collection of available information and province-wide aerial photography, focussing on the condition of the province from an ecological perspective. The next step was to focus on the larger areas that are Crown Land, with more detailed studies conducted, including extensive field work. A review of commitments and conflicts in these areas was done internally within government. Step three involved the public release of the proposed plan, which included a committee that held public meetings across the province. The public review committee, and the public meeting process in general, and has received many positive comments from those who participated.

Critical factors involved in a system planning exercise are as follows:

- build a strong scientific component/foundation;
- conduct an independent public review process;
- build a flexible system;
- look at the ecosystem and have an inclusive approach; and
- identify large areas to maintain biodiversity

It's important to understand Nova Scotia's varying landscapes, and then apply this to protected area planning.

National Marine Sanctuaries Program
Brad Barr, Stellwagen Bank Marine Sanctuary, National Oceanic and Atmospheric Administration, USA

Stellwagen Bank is part of a national system of marine protected areas (MPAs) in the United States. The program, which authorizes the Secretary of Commerce to designate discrete areas of special national significance as National Marine Sanctuaries, was established in 1975.

Brad Barr introduced the broad mandate of the program which is to "promote comprehensive, long-term management of conservation, recreation, ecological, historical, research, educational, or aesthetic values of the MPAs". Important to this is the program's ability to provide authority for comprehensive and coordinated conservation and management, which compliments existing authorities.

Brad went on to discuss how MPAs are designated. In the United States, MPAs are designated by the Secretary of Commerce (but more often by Congress directly). Factors considered include ecological and cultural/historical values, present and potential uses, threats, adequacy of existing authorities, manageability, and public benefits/detriments. The area considered must be of "special national significance", and require enhancement of the existing authorities so that designation will address the inadequacy, and the area must also be of a size and nature that will permit effective management.

In terms of a "systems approach" to MPAs, Brad challenged the current framework in the United States. The existing regulatory framework for the National Marine Sanctuary Program (NMSP) does little to explicitly foster a "system approach". Most, if not all, of the official documents fail to mention 'system' or 'program' beyond the specific NMSPs. Brad discussed the downsides of not being a system which include duplication of effort, intra-program competition for resources, lack of shared vision and purpose, inconsistent policy development and implementation, and unlinked site management.

Brad outlined the future of the NMSP. First and foremost, there is a need to becoming a 'system' at the program level. Accomplishing this will require revising documents to enable

a system approach, visionary leadership, and developing skills to be an effective team. At the site level, NMSP is learning how to be a more effective part of a system, and is better defining the contributions site staff and managers can make to the success of an integrated MPA system.

With all this talk of "systems" Brad finished off by defining what a system looks like (which is still in the early thought stage). It includes commitment to and infrastructure to support effective communication among elements, high level of trust and collegial support, share successes and failures (unexpected outcomes), more shared resources, and big picture thinking integrated into all decisions. Any MPA system must be flexible enough to provide protection to a broad range of resources, but somehow logically fit together. A shared vision is essential!

Marine Protected Areas System Planning - The Australian Experience
Jon Day, Great Barrier Reef Marine Park Authority, Australia

Jon Day presented the experience of Australia the world's leader in MPA designations. Marine protected areas are now well established as an important marine conservation tool and Australia the World Conservation Union (IUCN) lists 303 separate MPAs in Australia covering an area of nearly 460,000 km2 (or around 5.18% of Australia's EEZ). MPAs have been established for a variety of purposes and benefits. Most MPAs are managed for either 'biodiversity preservation' or fisheries management purposes, but the majority of the total area declared within all Australian MPAs is designated as multiple-use. The majority of Australian MPAs (86%) are less than 50 km2; and only 3% are greater than 5000 km2. They range from small, high-protection marine reserves to large, multiple use marine parks, like the Great Barrier Reef Marine Park (GBRMP) in which a wide range of exploitative uses such as fishing (commercial and recreational), tourism and recreation are permitted.

Jon described the GBRMP experience in further detail. This is the biggest and probably best known MPA in the world, covering an area of 343,800 sq. km. The park has been established in legislation for multiple use, and "reasonable use" is a statutory right. To ensure that all reasonable and appropriate uses can occur somewhere in the GBRMP with minimal conflict, a spectrum of zones has been applied ranging from General Use Zones to Preservation Zones. GBRMPA provides several lessons in 'adaptive management', with the park initially set up with minimal broad-scale ecological information and under controversial circumstances.

Jon indicated that historically, methods for selecting MPAs have not been consistently applied across all Australia's coastal and marine environments. Selection of many areas has developed in an ad hoc manner (although it can still be claimed that many MPAs were selected in areas which were, and still are, important for the protection of critical habitat for commercially or recreationally important species). This legacy of past decisions has resulted in a system of protected areas today which represents only part of the range of communities, habitats and species within Australia's marine regions. This has led to a lack of formal habitat conservation management in the temperate areas, with many of the MPAs that have

been declared being relatively small and/or single purpose rather than having any integrated management provisions.

There is a greater understanding of the need for the identification/ selection of a national representative system of MPAs. This is now an intergovernmental objective. In 1991, the Federal Government announced a 10 year marine conservation program to ensure the conservation and sustainable use of Australia's marine and estuarine environments through a National Representative System of Marine Protected Areas (NRSMPA). This commitment to systematically expand Australia's existing marine reserve system, was reinforced through the National Ecologically Sustainable Development Strategy and the Intergovernmental Agreement on the Environment and is one of six major objectives of the Commonwealth's Ocean Rescue 2000 Program. Australia has a good record in the establishment of MPAs, although historically many of the MPAs have been chosen opportunistically with only minimal consideration of ecological factors.

Jon listed a number of lessons that Canada might learn from Australia and elsewhere about establishing a system of MPAs:

- major constraints relating to overlapping responsibilities of the agencies involved;
- public support and understanding is essential;
- assessment of ecological patterns and processes;
- flexible process of selection;
- need for a vision and long term strategy;
- a MPA will not be perfect;
- MPAs are not an instant panacea;
- no one MPA model should be nationally applicable;
- make MPAs sufficiently large;
- need for an organizational framework;
- long-term viability of an MPA also needs to be fully considered;
- the declaration of MPAs can act like a magnet;
- whenever there is any doubt, the precautionary approach should be applied;
- ensure the MPA is scientific, transparent and accountable to the community;
- the ultimate process of selection and proclamation of protected areas is socio-political;
- opportunistic and pragmatic selection of MPAs;
- the necessary information will not always be immediately available; and,
- MPAs are not ends in themselves, but are vital components within integrated resource management regimes.

Jon concluded by suggesting that a systematically-chosen network of representative MPAs will ensure that all the essential elements of ecological diversity of marine communities in Canada are protected - this is something that no other approach to identifying MPAs can provide. Successful implementation of a nationally representative system will rest on three fundamental premises:

- First, that Canada is able to establish a bioregional planning and management framework capable of operating across all scales and which is accepted by all agencies and jurisdictions;
- Second, that in planning a nationally representative system, all stakeholders and the wider community are involved throughout the process of identifying and selecting areas for reservation; and,
- Third, that non-ecological goals are regarded as modifiers of the primary biodiversity or ecological goals once candidate MPAs have been identified and selected. The ecologically-appropriate selection criteria must be considered first and then refined by other necessary selection criteria.

Session 2 - Marine Protected Area Tools and Approaches

Marine Ecosystem Delineation in the Strait of Georgia, British Columbia - An Overview of Approaches Presented at a Recent Workshop
Julie Barr, Department of Fisheries and Oceans, Pacific Region
Colin Levings, Department of Fisheries and Oceans, Pacific Region

Julie Barr began by stating that a strategy for the creation of MPAs is being developed in the Pacific Region, with a focus on co-ordinating and integrating current programs (i.e., Parks Canada, provincial initiatives, etc.). This has been an ongoing process for the past four years, and several multi-stakeholder meetings have taken place with the objective of creating a common vision and approach to the establishment of MPAs in British Columbia.

One part of the vision involves establishing MPAs in a broad context, and not focusing on a site by site basis. The region is also looking at developing a regional marine planning framework which would divide the Pacific coast into six areas (*e.g.*, North vs. South coast). This would set the stage for developing MPAs in a broad context.

Dr. Colin Levings began by introducing the physical features of the Strait of Georgia. It contains approximately 5,000 km of shoreline with a mosaic of habitats ranging from mud flats to rocky shores, as well as many estuaries. He then summarized some planning concepts that were introduced at the recent workshop, which were quite varied.

Colin emphasized the importance of linking watersheds to coastal zones. Much work has already been done on watersheds in the Pacific Region, which now be linked with the coastal zone.

Major issues coming out of the recent workshop included the following:

- MPA habitat management must account for cumulative effects;
- reconciliation of the scientific and managerial definition of the 'ecosystem';
- communication of scientific results;
- institutional co-ordination is needed; and,
- some attendees thought that classification procedures developed for the land are not applicable in the ocean

Colin concluded by identifying some key ecosystem properties that can be measured in the future in support of ecosystem based management:

- distribution and abundance of keystone species;
- concepts of disturbance regimes;
- bioaccumulation;
- human pressures;
- number and extent of shellfish closures;
- amount of area or shoreline perimeter put into specific zones; and
- number of hectares put in MPAs

Information Needs for Marine Protected Areas - the Role of the East Coast of North America Strategic Assessment Project (ECNASAP)
Kees Zwannenburg, Department of Fisheries and Oceans, Maritimes Region

To start, Kees Zwannenburg introduced the East Coast of North America Strategic Assessment Project (ECNASAP), emphasizing it as a truly collaborative effort. Those involved included Environment Canada, NMFS, NOAA, and others. This project was an attempt to collect existing information to look at fish distribution and dynamics, and habitat distribution and dynamics at a broad level, the north-east coast of North America. The project study area is from Cape Hatteras in North Carolina to Cape Chidley in Labrador. This broadly based data gives us the ability to look at a "global" picture over time.

Kees detailed how the ECNASAP information was used to plot species distributions as well as habitat selection. Species associations over time were clustered for the north and the south, using the same technique. What emerged was a simplification of clusters in the north, and an increased complexity of clusters in the south. Kees and his associates determined that the simplification in the north was due to the loss of dominant species (i.e., cod) as well as the fact that the North Atlantic waters have become colder.

For the rational placement of MPAs and determination boundaries good information (data) is a basic requirement. The ECNASAP data model is costly to collect and is not really applicable at a fine scale. To monitor MPAs in this fashion would be labour and cost intensive.

Habitat Suitability Indices and Essential Fish Habitat
Steven Brown, National Oceanic and Atmospheric Administration, USA
Strategic Environmental Assessment Division

Dr. Steven Brown presented the latest developments by the National Oceanic and Atmospheric Administration (NOAA) with regard to the use and application of Habitat Suitability Indices and Essential Fish Habitat provisions of the *Magnuson-Stevens Fishery Conservation and Management Act*. Although both these initiatives are not directly related to MPA designation, the information and maps being developed could presumably be used as information sources for future planning efforts.

Habitat suitability index (HSI) models were presented, with the mapping effort in Casco Bay, Maine provided as an example. HSI values are calculated as a function of a species' habitat associations and available habitat. Using published information and sampling data, models for 2-4 life stages were developed for a number of species including; sand lance, Atlantic salmon, tomcod, winter flounder, softshell clam, and lobster. Habitat was defined by temperature, salinity, depth, and substrate. Using a geographic information system, the models classified environmental maps to a 0-1 suitability scale, and mapped the geometric mean. Models were verified using field data and expert review. HSI models can be used to

map species in unsampled areas, identify sensitive areas and species, areas of species interaction, habitat quality (and by inference relative abundance), evaluating potential impacts of regulatory or environmental change, and is useful for identifying and mapping areas for conservation or mitigation purposes.

Under the re-authorization of the *Magneson Act*, all fisheries management plans must be amended to include description, identification, conservation, and enhancement of Essential Fish Habitat (EFH). EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The EFH information will be used by the Secretary of Commerce in consultations with other federal agencies concerning any activity or proposed activity that may adversely impact EFH.

Role of Traditional Ecological Knowledge in Coastal and Marine Management - The Experience in the Maritimes
Denise McCullough, Oceans Act Coordination Office, Department of Fisheries and Oceans
Charlie Dennis, Eskasoni Fish and Wildlife Commission

Denise McCullough began with some background information on Traditional Ecological Knowledge (TEK) projects. Coastal communities dependent on the fisheries have been looking at alternative ways to make a living with the recent fisheries declines. One challenge facing them is identification and assessment of their available resources, and how they interact with them. Denise's involvement in the collection of traditional ecological knowledge (TEK) began in 1993 with the Shelburne County Marine Industry Advisory Committee.

TEK collection involves talking to the local experts - the resource users, and documenting and mapping the results. There has been concern in the past that TEK is not as 'valid' as scientific knowledge. These types of knowledge are complimentary and should be integrated and used together. The main advantages of this approach being that it creates a "common language" for both the community groups and the government. It also helps build common ground and consensus within the community and trust with government partners, while enabling communities to develop the necessary skills to become a part of the process.

To enhance the validity of the TEK collected, Denise's group spoke with many people in order to verify the information received. Numerous open houses were also held for data review to ensure all information was correct. Denise concluded by giving numerous examples of the application the coastal resource maps have been involved in, including: the MPA planning process (potentially), watershed management plans, environmental assessments, integrated resource management, coastal zone management plans, aquaculture development, education, and emergency response.

Thomas Johnson (on behalf of Charlie Dennis) spoke about the collection of medicinal TEK in Cape Breton Island over the past year. Maps were produced for the Malagawatch area, with about 95% of the information collected from the elders in the community. Mi'kmag history is passed on orally, so extensive interviews were necessary. These maps focused on

terrestrial plant species, although omitted potentially dangerous species. All information is stored digitally.

In the next phase of the program, all five bands left in Cape Breton will be covered, producing maps similar to the medicinal TEK ones but also including traditional hunting and fishing grounds, and traditional encampments along the Bras d'Or Lakes.

Assessing and Monitoring in Marine Protected Areas - A Case Study of Stellwagen Bank
Peter Auster, National Undersea Research Center
University of Connecticut

It is possible, as Kees demonstrated, to use fish survey data to delineate assemblage or community boundaries of fishes within a region. These assemblage boundaries can be used as a way of delineating representative communities within a system. Mr. Auster provided some detailed examples to demonstrate this. Assemblage data has been used to develop survey methods and monitoring protocols for assessing what is in the Stellwagen National Marine Sanctuary, in terms of fish community resources, and for monitoring habitat change over time.

A habitat classification scheme has been developed based on the distribution of fishes and statistical associations with particular types of habitats that were identified over time. The scheme itself goes from simple to complex (smooth bottom to piled boulders), and an accompanying habitat quality/complexity index has also been developed. Eventually, data such as where dominant species are found may be used to develop monitoring schemes for habitat integrity over time. This monitoring could be done using bathymetric data, fractal dimension measurements, sidescan imagery, image analysis techniques for looking at sonar records, and/or using underwater image collection.

Peter and colleagues would like to develop some conceptual models that integrate a large number of fishing gear impact studies, and look at how fishing activities themselves alter sea floor habitats. Work on these is ongoing.

Biophysical Classification of Offshore Regions - Nova Scotia
Derek Davis
Nova Scotia Museum of Natural History

Dr. Derek Davis began with a brief description of the history of the development of a biophysical classification of offshore regions for the continental shelf of Nova Scotia. A comprehensive biophysical description of the province of Nova Scotia and its coastal areas, The Natural History of Nova Scotia, was completed in 1984 as a cooperative project of both the Departments of Education and Natural Resources. This two volume publication focuses on terrestrial landscapes. Using the same principals of analysis, it has been revised to include marine areas. The revision includes detailed analysis of natural features and

processes of the ocean and references to the cultural use of marine resources that are of long term economic significance to the people of Nova Scotia.

Derek went on to explain that the biophysical description is a hierarchical system containing eco-regions (identified as regions), eco-districts (identified as districts) and eco-sections (identified as units). The eco-sections, or units, can be geographically dispersed. Habitat types were classified in order to hang details on the above generalities. Landscape elements described in this hierarchical system all take into account the processes and habitats that occur within those units. Within the system, one can look up the unit of interest in and learn about the processes, habitats, and associations, occurring in that area.

This system of biophysical classification is compatible with other classification systems for offshore areas, such as the system of marine regions used by Parks Canada, although greater emphasis has been placed on geology, physiography and localized distributions of biological features. The classification framework can accommodate further subdivision with increased knowledge of offshore areas.

A National Framework for Marine Representative Areas - Hierarchical Classification Systems and an Approach to Selection of Marine Protected Areas
John Roff, University of Guelph

Dr. John Roff began by stating that if marine ecosystems are to be systematically protected, we need to identify their communities and delineate boundaries in some form of consistent classification and approach. With Geomatics International, the World Wildlife Fund and Jon Day, he has developed a hierarchical classification system for marine communities based on recurrent, or enduring, geophysical features in the marine environment. The selection of marine protected areas without reference to some classification for marine representative areas (MRAs) becomes an arbitrary undertaking.

There are two parts to this approach and framework: i) a classification system for marine representative areas; and ii) criteria for selection of MPAs within this system. It's important to recognize that MPAs may either lie within a MRAs and may be a composite of MRAs. In other words, protected areas will not necessarily lie within the boundaries of representative areas, they may in fact encapsulate many of them.

MRAs could, in theory, be classified at various levels of an ecological hierarchy (ecosystem, community, population). John felt that only the community level is inherently workable (the population level comes in when selecting specific MPAs, not MRAs). Working at the population level leads to a species by species approach, and working at the ecosystem level is problematic due to the vague nature of the word 'ecosystem'. He suggested reserving the term for talking about processes and interactions.

John's framework uses the biocoenosis approach. Biocoenosis is an ecological unit equivalent to a species. It is a recurrent group, or assemblage of species that is typically found together. This approach predicts the expected biocoenosis on the basis of documented

habitat characters. The advantage of this approach is that marine representative units can be identified from already mapped geophysical features, or by remote sensing of appropriate surrogate variables, and eliminates the need for an impossible amount of survey work. The habitat is the environmental type of the biocoenosis. In putting the habitat and the biocoenosis together, we get the biotope, which is a group of species that is typically found together in some identifiable habitat. The biotope is the lowest level of the community hierarchy.

The strengths of the framework are its abilities to:

- provide a defensible marine classification for Canada's oceans and the Great Lakes based on a minimal set of key physiographic and oceanographic factors;
- systematically identify marine communities and delineation of their boundaries in a consistent classification in a way that can ensure that representative examples of Canada's marine, estuarine and freshwater areas are properly identified and able to be protected; and
- give this hierarchical system a global perspective, and also consider the differences between benthic and pelagic systems which enables the identification of various finer levels of "seascapes" down to the delineation of habitats.

John concluded by stating that this framework, based on founded ecological principle, actually contains nothing new, but is a historical reconstruction based on approaches and ecological information. He reinforced the frameworks generality, stating that it is applicable to the entire east coast of Canada, as well as across the globe. In closing he used slides to demonstrate completely different assemblages of organisms separated by substrate type, depth and light - simple and fundamental ecological criteria.

ROUNDTABLE DISCUSSION – SUMMARY

(D. Fenton)

This section presents many of the key issues, themes and comments during both the *Roundtable* session and the question and answer periods that followed individual presentations. A wide range of issues emerged from the discussion, such as: inter-government coordination; MPA planning processes; stakeholder involvement; information needs; and future MPA projects. This lively discussion is summarized in point form below, with additional documentation of the session available upon request.

Although much of the discussion focused on issues that are specific to the Maritimes, it is felt that many of the comments are equally relevant on a national scale providing direction for MPA system planning efforts throughout Canada.

Issue – Protected area program coordination

There are different marine protection and conservation programs by both federal and provincial agencies in Canada. As such, each would need to be involved in developing an overall "system plan" for MPAs in Canada. Concerns were raised by participants as to the apparent lack of coordination among various government efforts. Moreover, questions arose as to the need for separate programs by different departments to achieve marine conservation objectives. Inter-program coordination between government agencies is required on a number of levels:

- Federal programs: attention was focused on the three federal programs with a perception that they overlap in terms of many of the key objectives, *e.g.* biodiversity conservation.
- Provincial efforts: greater linkages with provincial protected areas efforts
- United States: greater linkages in transboundary areas *e.g.* US Sanctuaries Program

Strong leadership from DFO was emphasized to provide a definite and consistent structure, nationally and regionally, whereby effective interdepartmental coordination is achieved. At both the national and regional level, interdepartmental committees have been established. Participants emphasized that any framework developed should be driven by common goals for a more systematic means of choosing MPAs from a "programmatic" level. Better communication to the public of each of the protected area program objectives was stressed as a key requirement to moving forward.

Issue – Future Participation: developing a "shared vision"

Participants stressed the need for a planning process which pulls together both people and information in an open forum for dialogue. This process would include developing common objectives for the system of MPAs, or as one participant stated "it ultimately comes down to developing a shared vision". Government representatives emphasized the important role of broad public participation in protected areas identification and management, and its requirement under legislation such as the *Oceans Act*.

Much of the discussion from participants revolved around the differences between an "ad-hoc" versus a "rational" approach to the identification and selection of areas for special protection. International presenters noted the problems with only using an ad-hoc or opportunistic selection method, which has often resulting in failing to meet certain conservation objectives, *e.g.* ecological representation.

Mistrust of government was identified as a key "hurdle" that must be overcome to make the planning process legitimate to all the potential participants. As one participant stressed: "we want meaningful involvement". Several participants noted the "political realities" which have required governments to respond to pressure to select and promote certain sites. This has led to questions concerning the ability for the planning process to adequately reflect the perspectives of all participants.

Many participants debated the ability to achieve "consensus". Although it was agreed that total agreement on every site is virtually impossible, there can be consensus with respect to an overall thrust to the program, particularly with respect to policies, principles and the design of a planning process.

Workshop organizers stressed that the *Roundtable* itself was not consultations on the MPA Program. These discussions will be provided over the next few years and will require many sessions with both interested and potentially affected parties.

Issue – Defining a MPA: what requires "special protection"?

A great deal of discussion focused on the "definition" of a MPA. There are multiple objectives for MPAs, *e.g.* fisheries conservation, whale protection, biodiversity protection, and therefore different interpretations of what "protected" means. The *Oceans Act* states that MPAs are used for areas that require "special protection". A request for "working guidelines" was made to enable a better understanding and definition of the scope of the MPA Program. In particular, emphasis was placed upon the role of selection criteria in identifying social, economic, ecological issues and characteristics of a particular protected area.

Issue - Scope of MPAs to address marine conservation and management requirements

DFO staff described the use of MPAs in terms of the broader application of the *Oceans Act* in Canadian waters. MPAs are one of several conservation and protection measures included

in the *Oceans Act*. Several participants stressed that MPAs should not be considered the solution to all conservation and protection issues in the marine environment. They are meant to be used in conjunction with other *Oceans Act* initiatives or "tools", such as integrated coastal and oceans management (OCM) plans, marine environmental quality standards and guidelines, etc. In addition, there are many other "tools" available to DFO and other regulators to address specific conservation concerns, including those now used under the Fisheries Act, Notices to Mariners under Coast Guard, exclusion zones, industry Codes of Practice, etc. Particular emphasis was placed on the role of integrated management and planning efforts which would to better identify the role and function of MPAs in meeting broader conservation objectives.

Several fishing industry representatives noted that there are a great number and complexity of fisheries conservation measures already in place. In other words, it should not be assumed that "we have a clean slate". In particular, fisheries closures were identified as a management measure that closely resemble the objectives of MPAs and which have been used widely across the Maritimes to meet specific fisheries conservation objectives. Are these not MPAs by another name? Other participants noted a clear distinction between the use of fisheries closures and "harvest reserves" and the application of protected areas to meet broader biodiversity goals. Both are seen as having an impact or role on the current fisheries regime, but whether they are a significant or minor tool for management remained a key question to many participants.

Suggestions were made to those working on protected areas to work closely with the existing fisheries management framework, emphasizing the advisory and consultation mechanisms already in place. More discussion on the role of MPAs to address fisheries management issues was proposed to better understand the connections between the two pieces of DFO legislation.

<u>Issue – Information: the "foundation" of system planning</u>

The scale and availability of ecological information to support MPA planning efforts was a common issue raised during the session. To develop a "system of protected areas" ultimately involves collecting information on a regional or small geographical scale. Participants noted that the most obvious problem in trying to capture or classify various components of marine ecosystems given their dynamic nature. Many of the data layers identified for MPA system planning are complex and change on decadal scales. Placing boundaries or "boxes" in the marine environment that can represent persistent biological or ecological features was identified as a key challenge. As a result, there was general support for conducting "new research" that focuses on addressing some of the key ecological questions surrounding both MPA system and site design.

There was general support for a "sound ecological framework" in designing a system of MPAs. Marine classification approaches which attempt to characterize enduring ecological processes, features and patterns were seen as one important tool for identifying and evaluating a system of MPAs. This approach was noted as key component and tool in planning terrestrial protected areas in Canada and globally. Nevertheless, participants also

acknowledged the limitations of transferring any terrestrial models to the marine realm. In addition to building a physical habitat/ marine classification scheme, participants also emphasized the need to present information at the individual specie and community level. In particular, the need to identify "critical habitat" areas for valued species, including discrete areas of importance such as spawning or juvenile areas, was suggested.

Several sources of information for MPA planning were discussed including traditional ecological knowledge, scientific survey data, and the use of various data modeling techniques. Participants stressed the need for a balanced approach, taking into consideration all sources of information, particularly those which are more "qualitative" in nature. The role of mapping, including the use of geographic information systems, was suggested as a key means of combining information from different sources into a common format for analysis.

The limits of current science programs in both government and non-government institutions to deliver on MPA system planning efforts was identified as a key challenge. Government institutions have a range of other responsibilities, including the needs of fisheries management, which were sometimes seen as "competing" for attention and resources. Participants stressed the need for greater information sharing among all researchers and stakeholders involved in protected areas research.

Issue – Need for MPA "projects": testing the theory

Several participants discussed the need to initiate "projects" to better understand the role of the DFO MPA Program in general, and the future application of MPA system planning models and concepts. Two types of projects were proposed during the session:

1. Given the knowledge base available and the broad interest, the Scotian Shelf/Bay of Fundy region was suggested as a "study area" in which to examine the role of MPAs as a management tool. Ideas for the case study included:

    - identify the current level of management and designations for protection;
    - collect information which will help identify areas for consideration as protected areas, *e.g.* ecological frameworks, critical habitat; and
    - identify the activities and resource uses across the region

    The goal of this case study would be to provide a common set of information, which could feed into a planning process with all interested groups (regulators, industry, academia, etc.). From this process, it was expected that specific areas would be identified as potential MPAs.

2. In addition to a broad study area there was a call and general support for a "non-controversial" project on a specific site(s), in order to better understand the MPA site designation process. There were concerns that a non-controversial site would be difficult to identify and would not be ecologically significant. The guests from other countries acknowledged that many of the first sites in their respective protected area programs

were "opportunistic" based on both the knowledge of the day and the public desire to move ahead with certain sites at that time.

ACKNOWLEDGEMENTS

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Appendix A

OCEANS ACT

PART II - OCEANS MANAGEMENT STRATEGY

Part does not apply to inland waters

28. For greater certainty, this Part does not apply in respect of rivers and lakes.

Development and implementation of strategy

29. The Minister, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, shall lead and facilitate the development and implementation of a national strategy for the management of estuarine, coastal and marine ecosystems in waters that form part of Canada or in which Canada has sovereign rights under international law.

Principles of strategy

30. The national strategy will be based on the principles of

(a) sustainable development, that is, development that meets the needs of the present without compromising the ability of future generations to meet their own needs;

(b) the integrated management of activities in estuaries, coastal waters and marine waters that form part of Canada or in which Canada has sovereign rights under international law; and

(c) the precautionary approach, that is, erring on the side of caution.

Integrated management plans

31. The Minister, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, shall lead and facilitate the development and implementation of plans for the integrated management of all activities or measures in or affecting estuaries, coastal waters and marine waters that form part of Canada or in which Canada has sovereign rights under international law.

Implementation of integrated management plans

32. For the purpose of the implementation of integrated management plans, the Minister

(a) shall develop and implement policies and programs with respect to matters assigned by law to the Minister;

(b) shall coordinate with other ministers, boards and agencies of the Government of Canada the implementation of policies and programs of the Government with respect to all activities or measures in or affecting coastal waters and marine waters;

(c) may, on his or her own or jointly with another person or body or with another minister, board or agency of the Government of Canada, and taking into consideration the views of other ministers, boards and agencies of the Government of Canada, provincial and territorial governments and affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements,

(i) establish advisory or management bodies and appoint or designate, as appropriate, members of those bodies, and

(ii) recognize established advisory or management bodies; and

(d) may, in consultation with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, establish marine environmental quality guidelines, objectives and criteria respecting estuaries, coastal waters and marine waters.

Cooperation and agreements

33. (1) In exercising the powers and performing the duties and functions assigned to the Minister by this Act, the Minister

(a) shall cooperate with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements;

(b) may enter into agreements with any person or body or with another minister, board or agency of the Government of Canada;

(c) shall gather, compile, analyse, coordinate and disseminate information;

(d) may make grants and contributions on terms and conditions approved by the Treasury Board; and

(e) may make recoverable expenditures on behalf of and at the request of any other minister, board or agency of the Government of Canada or of a province or any person or body.

Consultation

(2) In exercising the powers and performing the duties and functions mentioned in this Part, the Minister may consult with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements.

Logistics support, etc.

34. The Minister may coordinate logistics support and provide related assistance for the purposes of advancing scientific knowledge of estuarine, coastal and marine ecosystems.

Marine protected areas

35. (1) A marine protected area is an area of the sea that forms part of the internal waters of Canada, the territorial sea of Canada or the exclusive economic zone of Canada and has been designated under this section for special protection for one or more of the following reasons:

(a) the conservation and protection of commercial and non_commercial fishery resources, including marine mammals, and their habitats;

(b) the conservation and protection of endangered or threatened marine species, and their habitats;

(c) the conservation and protection of unique habitats;

(d) the conservation and protection of marine areas of high biodiversity or biological productivity; and

(e) the conservation and protection of any other marine resource or habitat as is necessary to fulfil the mandate of the Minister.

Marine protected areas

(2) For the purposes of integrated management plans referred to in sections 31 and 32, the Minister will lead and coordinate the development and implementation of a national system of marine protected areas on behalf of the Government of Canada.

Regulations

(3) The Governor in Council, on the recommendation of the Minister, may make regulations

(a) designating marine protected areas; and

(b) prescribing measures that may include but not be limited to

(i) the zoning of marine protected areas,

(ii) the prohibition of classes of activities within marine protected areas, and

(iii) any other matter consistent with the purpose of the designation.

Interim marine protected areas in emergency situations

36. (1) The Governor in Council, on the recommendation of the Minister, may make orders exercising any power under section 35 on an emergency basis, where the Minister is of the opinion that a marine resource or habitat is or is likely to be at risk to the extent that such orders are not inconsistent with a land claims agreement that has been given effect and has been ratified or approved by an Act of Parliament.

Exemption from Statutory Instruments Act

(2) An order made under this section is exempt from the application of sections 3, 5 and 11 of the Statutory Instruments Act.

Temporary effect

(3) An order made under this section that is not repealed ceases to have effect 90 days after it is made.

Appendix B

Roundtable Participants List

Department of Fisheries and Oceans

Tim Anderson, Newfoundland Region
Julie Barr, Pacific Region
Luci Bosse, Laurentian Region
Helen Fast, Central and Arctic Region
R. Finn, Newfoundland Region
Helen Joseph, National Capital Region
Daniel LeSauteur, Laurentian Region
Colin Levings, Pacific Region
Jack Mathias, Central and Arctic Region
Joan O'Brien, Newfoundland Region

Department of Fisheries and Oceans - Maritimes Region

Sophie Bastien-Daigle
Mike Bewers
Carla Dale
Tim Hall
Glen Harrison
Paul Keizer
Ellen Kenchington
Bob Rutherford
Faith Scatollon
John Trembley
Maxine Westhead
Kees Zwannenburg

Other Government

Bill Ayer, New Brunswick Department of Environment
Larry Hildebrand, Environment Canada
Barry Jones, New Brunswick Department of Aquaculture and Fisheries
John LeDuc and Dale Smith, Department of Natural Resources
Neil Munro, Department of Canadian Heritage
Bruce Smith, PEI Department of Environmental Resources and Fisheries

Non-Government

John Angel, Canadian Prawn Producers Assoc.
Peter J. Auster, National Undersea Research Center

Brad Barr, Stellwagen Bank Marine Sanctuary
Karen Beazley, School for Resource and Environmental Studies, Dalhousie University
Danielle Bellefleur, Ecology Action Centre
Sam Brody, Woods Hole Oceanographic Institution, Marine Policy Center Steve Brown, National Atmospheric and Oceanic Administration
Derek Davis, Nova Scotia Museum of Natural History
Jon Day, Great Barrier Reef Marine Park Authority, Australia
Derek Fenton, *Oceans Act* Coordination Office
Fabian Francis, Eskasoni Fish and Wildlife Service
Brian Giroux, Scotia-Fundy Mobile Gear Association
Shannon Gowans, Biology Department, Dalhousie University
Sasha Hooker, Biology Department, Dalhousie University
Thomas Johnson, Eskasoni Fish and Wildlife Commission
Trevor Kenchington, Gadus Associates
Patrick McGuiness, Canadian Fisheries Council
Denise McCullough, Coast Zone Resources Ltd.
Inka Milewski, World Wildlife Fund/Conservation Council of New Brunswick
Michael O'Connor, Seafood Producers of Nova Scotia/National Sea Products
John Roff, Department of Zoology, University of Guelph
Nancy Shackell, Ecology Action Centre
Eric Skerry, Prince Edward Island Fisherman's Association
Roger Sterling, Seafood Producers of Nova Scotia
Dick Stewart, Herring Co-op
Evan Walters, Scotia-Fundy Inshore Fisherman's Association
Hal Whitehead, Biology Department, Dalhousie University
Martin Willison, School for Resource and Environmental Studies, Dalhousie University
Fred Woodman, Fisheries Resource Conservation Council

Other Invitees (unable not attend)

Graham Daborn, Acadia Centre for Estuarine Research, Acadia University
Louis LaPierre, Université de Moncton
Mike Belliveau, Maritime Fisheries Union
Arthur Bull, Fundy Fisheries Council
Jean Saint-Cyr, FRAPP
Rory McLennan, PEI Fisherman's Association
Charlie Dennis, Eskasoni Fish and Wildlife Commission
Melanie Sonnenburg, Eastern Fisherman's Federation
Brent Smith, Canada-NS Offshore Petroleum Board
Robin Mahon, Fisheries and Environmental Consulting
Evelyne Meltzer, Meltzer Research and Consulting

Appendix C

Roundtable Agenda

Maritime Centre, Class of '47 Boardroom
Halifax, Nova Scotia
February 12-13, 1998

Thursday, February 12 – Presentations (Chair: F. Scatollon)

Session 1 - Introduction and Marine Protected Area Programs

8:30	Welcome and Introductory Remarks Faith Scattolon, *Oceans Act* Coordination Office, Department of Fisheries and Oceans , Maritimes Region
8:30- 9:00	Introduction to Marine Protected Areas Martin Willison, Dalhousie University
9:00 - 9:30	Marine Protected Areas and the *Oceans Act* Bob Rutherford, *Oceans Act* Coordination Office Department of Fisheries and Oceans, Maritimes Region
9:30 - 10:00	Parks Canada's National Marine Conservation Areas Neil Munro, Parks Canada Atlantic Region
10:00 - 10:30	Protected Area Programs of Environment Canada Larry Hildebrand, Environment Canada Atlantic Region

10:30 - 11:00 - COFFEE BREAK

11:00 - 11:30	Nova Scotia Parks Strategy John LeDuc Parks Division, Government of Nova Scotia
11:30 - 12:00	National Marine Sanctuaries Program Brad Barr National Oceanic and Atmospheric Administration, USA Stellwagen Bank Marine Sanctuary
12:00 - 12:30	Marine Protected Areas System Planning - The Australian Experience Jon Day Great Barrier Reef Marine Park Authority, Australia

12:30 - 1:30 - LUNCH BREAK

Session 2 - Marine Protected Area Tools and Approaches

1:30 - 2:00 Marine Ecosystem Delineation in the Strait of Georgia, British Columbia - An Overview of Approaches Presented at a Recent Workshop
Colin Levings, Department of Fisheries and Oceans
Pacific Region

2:00 - 2:30 Information Needs for Marine Protected Areas - The Role of the East Coast of North America Strategic Assessment Project (ECNASAP)
Kees Zwannenburg, Department of Fisheries and Oceans
Maritimes Region

2:30 - 3:00 Habitat Suitability Indices and Essential Fish Habitat
Steve Brown
National Oceanic and Atmospheric Administration, USA
Strategic Environmental Assessment Division

3:00 - 3:30 COFFEE BREAK

3:30 - 4:00 Role of Traditional Ecological Knowledge in Coastal and Marine Management - The Experience in the Maritimes
Denise McCullough, *Oceans Act* Coordination Office
Charlie Dennis, Eskasoni Fish and Wildlife Commission

4:00 - 4:30 Assessing and Monitoring in Marine Protected Areas - A Case Study of Stellwagen Bank
Peter Auster
National Undersea Research Center
University of Connecticut

Friday, February 13th - Final Presentations and Discussion (Chair: F. Scatollon)

9:00 Biophysical Classification of Offshore Regions - Nova Scotia
Derek Davis
Nova Scotia Museum

9:30 A National Framework for Marine Representative Areas - Hierarchical Classification Systems and an Approach to Selection of Marine Protected Areas
John Roff
University of Guelph

10:00 - 3:30 *Roundtable* Discussion on Key Issues and Future MPA System Planning Efforts in Canada (Chair: R. Rutherford)